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United States Patent [19][11] **Patent Number:** **5,978,160****Koiwai et al.**[45] **Date of Patent:** **Nov. 2, 1999**

[54] **LENS BARREL HAVING A FLARE DIAPHRAGM WHICH CAN ADVANCE INTO AND RETREAT FROM THE OPTICAL PATH TO ELIMINATE DELETERIOUS LIGHT RESULTING FROM MOVEMENT OF THE LENS**

[56] **References Cited****U.S. PATENT DOCUMENTS**

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[52] **U.S. Cl.** **359/822; 359/704; 359/739; 359/740**

[58] **Field of Search** **359/822, 704, 359/739, 740**

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[57] ABSTRACT

In a lens barrel, a flare diaphragm is disposed on an optical path of lenses or in the vicinity thereof such that the flare diaphragm can advance into and retreat from the optical path for cutting deleterious light corresponding to the lenses moving in the direction of the optical axis. This lens barrel can reliably cut deleterious light flux in a simple structure.

23 Claims, 15 Drawing Sheets